

THE INVENTION CLAIMED IS

1. A lifter, comprising:
 - 5 an elevator plate fitted with a set of cam lifters distributed around an axis;
a multiple-lobe cam disposed in the edge of a hollow cylinder around said axis, and such that said set of cam lifters ride along said edge and provide for
 - 10 straight lifting and lowering of the elevator plate; and
a transmission and motor for turning the multiple-lobe cam relative to the elevator plate.
2. The lifter of claim 1, wherein:
 - 15 the multiple-lobe cam includes symmetrical sided lobes that permit the transmission and motor to operate in a single direction for both said lifting and lowering of the elevator plate.
- 20 3. The lifter of claim 1, wherein:
the multiple-lobe cam includes three symmetrical sided lobes that provide a three-point support of the elevator plate.
- 25 4. The lifter of claim 1, wherein:
the multiple-lobe cam and cam lifters provide flat spots on which to rest at minimum and maximum heights of elevation of the elevator plate.
- 30 5. An automated warehouse system row cart, comprising:
a rail car for trucking pallet loads within an automated warehouse;

a top tray disposed on top of the rail car and providing for lifting and lowering said pallet loads;

a lifter set inside the rail car and supporting the top tray, and providing for straight lifting and

5 lowering;

an elevator plate included in the lifter and fitted with a set of cam lifters distributed around an axis;

10 a multiple-lobe cam disposed in the edge of a hollow cylinder around said axis, and such that said set of cam lifters ride along said edge and provide for straight lifting and lowering of the elevator plate; and

a transmission and motor for turning the multiple-lobe cam relative to the elevator plate and
15 disposed within the rail car.

6. The row cart of claim 5, wherein:

the rail car provides for docking with an aisle cart in said automated warehouse.

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